

Do Now:

1. Given $f(x) = x^6 - 5x^4 - 36x^2$, find:

- (a) the complete factorization of $f(x)$
- (b) the complete solution set of $f(x)$
- (c)

Sketch the general graph of each function without your graphing calculator. Your sketch should contain both the x - and y -intercepts.

1. $f(x) = (x+1)(x-2)(x-4)$ 2. $f(x) = -(x+3)(x+2)(x-1)$

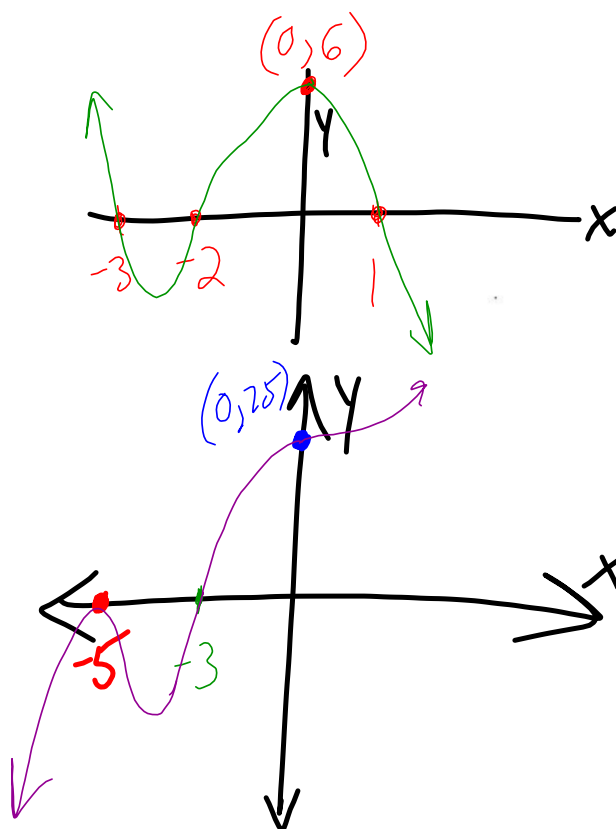
$x = -3, -2, 1$
 cross cross cross

y -int
 $x=0$ $-(0+3)(0+2)(0-1)$
 $= 6$

3. $f(x) = (x+5)^2(x+3)$

$x = -5$ $x = -3$
 bounce cross

y -int
 $x=0$ $(0+5)^2(0+3)$
 $0, 75$ $(5)^2(3)$
 $25 \cdot 3 = 75$



4. $f(x) = x^4 - 5x^2 + 4$

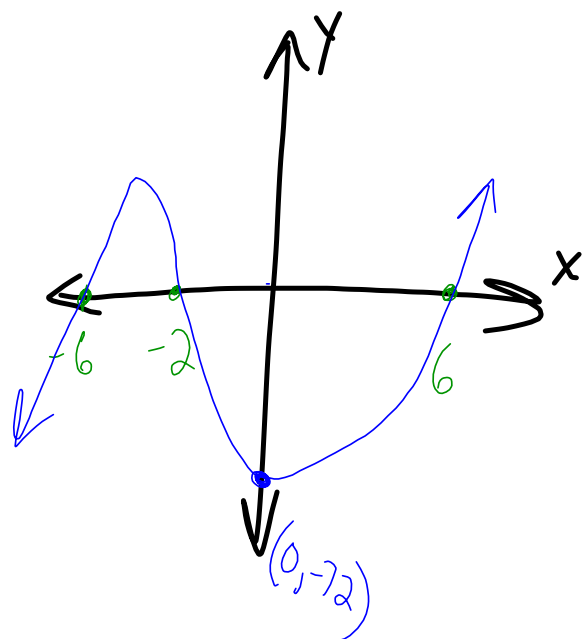
5. $f(x) = x^3 + 2x^2 - 8x$

6. $f(x) = x^3 + 2x^2 - 36x - 72$
 $x^2(x+2) - 36(x+2)$

$(x+2)(x^2 - 36)$

$(x+2)(x+6)(x-6)$

$x = -2 \quad -6 \quad 6$
 cross cross cross

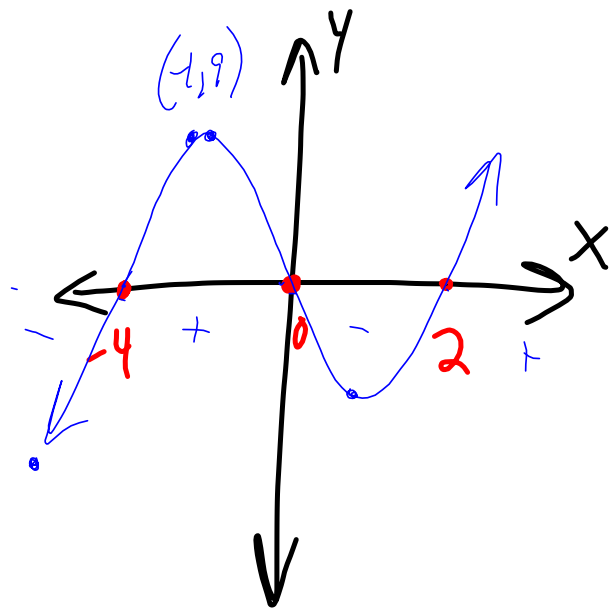


$$5) p(x) = x^3 + 2x^2 - 8x$$

$$x(x^2 + 2x - 8)$$

$$x(x+4)(x-2)$$

$x=0$	$x=-4$	$x=2$
cross	cross	cross



$$21) \quad x = -1, -2, -3$$

$$P(x) = (x+1)(x+2)(x+3)$$